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THE ASPECTS OF MODERN SYSTEM OF PASSPORTS DEFENSE AND MAIN FEATURES OF DETECTED FORGERY

The development of modern social relations together with the process of European integration of Ukraine has led to an increase in the number of travellers crossing the state border of Ukraine and the external borders of the EU. This has led to an increase in the use of counterfeit documents by law-abusers to enter a country illegally. Therefore, in recent years, the states of the world have introduced new passport documents with modern elements of protection that are difficult to counterfeit or imitate. The rapid development of printing media, the emergence of new methods and methods of forgery require a continuous analysis of the characteristics of detected counterfeits, in order to improve the elements of protection in passport documents.

The purpose of this article is to present the results of the study on the components of the modern system of protection of passport documents used in different countries of the world and the characteristic signs of detected counterfeits in documents.

As you know, all passport documents are provided with a combination of counterfeit protection, which includes a combination of various elements of technological, printing, and physical and chemical protection. The newest elements of the protection of passport documents include: laser micro perforation; two-dimensional iris printing; micro lens technology, applied from a microfilm. Laser micro perforation, the protective effect of it is based on the fact that an attempt to imitate it by mechanical punctures leads to inequalities in the places of the puncture). For two-dimensional iris printing is characterized by a combination of a sharp and gradual transition of colours. In contrast to conventional iris printing, smooth colour

transitions can take place not only in one direction but also in any direction (used when making a background image in passport documents). When using micro lens technology from a micro-image, the image underneath the lens visually increases several times, while the slope creates a moving effect - the image seems to fly on the surface.

The main methods of forging foreign passport documents, which are currently occurring: replacement of digital integrated image; Making changes to data pages; Replacement of sheets; Forgery of service marks, seals and stamps of the State Border Guard Service of Ukraine (border services of other countries) and other competent authorities. In the future, in the opinion of the authors, in order to increase the efficiency of the tasks in the field of forensic examination of passport and other documents that grant the right to cross the state border to citizens of Ukraine, foreigners and stateless persons, it is necessary: to study the new elements of protection used in the production of passport documents With the help of the latest technologies; Conducting a thorough analysis of information on ways to forge passport and other documents; The creation of appropriate databases containing relevant information on samples of passport documents of the countries of the world and their counterfeiting; To expand and ensure the development of inter-agency and international cooperation on the creation and testing of new advanced techniques for detecting counterfeits; To introduce an effective mechanism for the exchange of information on detected counterfeit passport documents with research and expert institutions of law enforcement agencies of Ukraine and other countries.

The prospects for further research in this area should be determined: the study of problem issues regarding the search for an optimal set of elements of protection against forgery of passport documents; providing forensic characterization of «imaginary travel documents» of unrecognized territories and non-existent countries.

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QUALITY ISSUES OF FORENSIC ACTIVITY

The special significance of forensic examination is determined by the fact that as a result of its conduct a written procedural document appears in the case materials certifying the fact and the progress of the conducted research on the submitted materials and containing conclusions on the questions posed to the expert, based on special knowledge. Currently, for the all evidence collected on cases, the expert's report is present in 99 percent of cases among other materials of the case and it is one of the main evidence in court.

Since the beginning of the 90s of the 20th century, the question of the general level of the quality of forensic science and activities was acute, it' leded to the cooperation of forensic experts from around the world.

Defining methods of quality control in forensic activity, American scientists in the 1950s proposed a concept of total (integrated) quality control, which involved documenting individual procedures and the quality system as a whole. For the first time, emphasis was placed on the organizational structure of the enterprise and the matrix of responsibility of employees and management. Since the 1970s and 1980s, this process has become massive, the standardization process is being implemented both at the national and international levels.

The processes of standardization are related to the formation and activities of the International Organization for Standardization (ISO), which develops and publishes international standards. Since the development of the international quality standards of the ISO 9000 series, a unified understanding of the term "quality" has come about, and the quality management system based on the international standards of the ISO 9000 series has become widespread not only in industry but also in other areas, including forensic activity.

While in Europe and America standardization and accreditation with application of special norms according to the specifics of the activity of forensic experts was chosen as the basic model for ensuring, the quality of forensic

institutions (laboratories), the USSR adhered to the model of the so-called scientific organization of labor.

Today, foreign expert laboratories, in order to ensure the quality of expert activity, introduce quality and technical competence standards, that is, they are following the way of introducing quality systems and accreditation.

Within the accreditation procedure, the standardization process is formalized according to a certain algorithm.

Accreditation is usually carried out by the accreditation body within a single system. The main goal of accreditation is to promote confidence in organizations by proving their competence, and thus creating conditions for mutual recognition of the results of their activities in various countries and regions of the world.

Today, in view of the widespread and widespread dissemination of the accreditation process, terms such as quality management, validation, verification, measurement uncertainty estimation, standard operating procedures are slowly but surely included in the practice of forensic experts in many countries of the world, including the Republic of Belarus.

The main standard for the work of the world expert community and the requirements of which the expert laboratories must comply with is ISO / IEC 17025 "General requirements for the competence of testing and calibration laboratories". This standard defines universal requirements for managing the work and organizational structure of the organization, a quality management system that includes the management of documentation, personnel requirements, the search for and elimination of inconsistencies,

Unified state policy in the field of implementing the quality management system should certainly include private expert activity, of course, on the principles of voluntariness.

At present in the Republic of Belarus, the authority for accreditation and conformity assessment activities is distributed among different bodies on the basis of a legally established principle of accreditation, according to which the

combination of accreditation activities with conformity certification activities is not allowed.

At the same time, it should be noted that in accordance with the National Accreditation System of the Republic of Belarus, as well as the provisions of international standards in this area, in particular Regulation (EC) No 765/2008 of the European Parliament and Council, a single national body has been created in the Republic of Belarus on accreditation, which already successfully functions.

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Military expertise: methodological aspect

The subject of the article is forensic expertise at the present stage of its development. At the same time, the attention is focused on a common methodological approach to the development of existing and formation of new classes, genera and species of forensic expertise, which is reflected in the organizational and legal exercise of the forensic-expert activities established in Ukraine. The contemporary vision of the forensic expertise criterion of classification of forensic expertise, not based on research methods and facilities in conjunction with the tasks to solve. Carried out characterization of the subject, object and expert assignments of the new class of forensic expertise – military expertise instituted by the order of the Ministry of Justice of Ukraine № 1350/5 dated 27.07.2015, registered by the Ministry of Justice of Ukraine on 29.07.2015 under № 915/27360.

On the basis of the analysis we can make the conclusion about the absence of an integrated methodological approach developed by the theory of forensic expertise, the allocation of military expertise to an independent class legal expertise. There was suggested the attempt to substitute military for judicial examination of the process of proof in legal proceedings. It is concluded that the formation of military expertise as an independent class of forensic expertise occurred in violation

of the methodological principles developed by forensic experts and evolutionary ways of genesis of new types of forensic examinations. There is scientific-methodical, informational and personnel problems of military expertise.

Based on the analysis of the proposed procedure for the development of separate mechanisms, forensic activity in the formation of a new genera and classes of forensic expertise, according to the author can guarantee the consistent quality of the conclusions of experts evaluating the investigator and the court. So, the first priority is seen definition of the subject of forensic examination, as well as specification and expert typing tasks. The absence of well-defined objects of military expertise and specified tasks does not allow formulating the notion of a subject of forensic military expertise as certain information about an event (actual data), that can be obtained by an expert as a result of research on the basis of special knowledge of certain properties, provided for examination of objects, which would distinguish military expertise from other types (families) of forensic examinations.

Then the proposed formulation is based on the typical tasks of expert lists of issues, submitted to the approval of the expert; separation and classification of expert research facilities; the choice of methods of industrial science and the determination of their specificity; development according to the stages of expert examination of expert technologies; the formation of terminological apparatus of a class or kind of forensics; development of technology of preparation of expert opinion. The article defends the idea of the superiority of the scientific criteria of forensic activities as a form of application with respect to the needs of the practice.

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LEGAL REGULATION OF FINGERPRINTING OF LIVING PERSONS

As we know, the results of expert investigations (conclusions of forensic experts), as well as the results of the examination of persons on different accounts,

are very important for establishing the circumstances of committing a crime, proving guilt or innocence of a person. Each of the parties to the criminal proceedings tries to use the results of expert research in its favor, paying attention not only to the expert's conclusion, but also to comply with the procedure for the detection and receipt of objects for examination.

A clear and understandable regulation of each procedural act enables the participants in criminal proceedings to correctly understand the law and apply it properly. Conversely, blurriness, uncertainty in the provisions of the law creates the possibility of its interpretation at its own discretion, taking into account its own interests. Misunderstanding of this nature arises during fingerprinting of living persons.

The issue of sustainable and modern methods of detecting and removing fingerprints (palms), as well as the technique of fingerprinting of both living persons and corpses, is quite well disclosed in the scientific literature.

The implementation of the latest technology requires appropriate logistics. In the case of the situational impossibility of acquiring the necessary modern devices, more attention should be paid to improving the quality of application of sustainable technologies and methods.

An equally important problem, the solution of which does not require high costs, is to improve legal regulation of issues related to fingerprinting of individuals in order to respect the rights and freedoms of citizens guaranteed by the Constitution of Ukraine and other normative and legal acts.

The highest criterion for the activities of all state legal institutes is the reliable protection of human rights. This also applies to the fingerprinting process.

In practice, there are cases of uncertainty regarding the issue of fingerprinting -those grounds, including enforcement, legality of actions of the subject, it will do so.

The analysis shows that the existing rules of departmental regulations of the Ministry of Internal Affairs of Ukraine concerning the fingerprint registration, which define its essence, principles, objectives, governing the activities of fingerprint

registration and registration outline objects, are not adjusted to the relevant legislation, and between each other.

In Ukraine there are also no legally binding rules referring to the legal basis of fingerprint registration, the conditions and reasons of fingerprinting, the list of persons subject to mandatory and voluntary fingerprinting, ensuring their rights and liberties, limits the use of fingerprint information, rights on access to it, storage and editing dactyl card, etc.

The way out is seen in the adoption of a separate law on fingerprinting of living persons and corpses, which would clearly outline all aspects of the process of fingerprinting in Ukraine.

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PROBLEMATIC ISSUES OF THE FORENSIC EXAMINATIONS TO DETERMINE THE AMOUNT OF ECONOMIC DAMAGES OF THE MATERIAL SHORTAGES RESULTED BY THEFT OR DAMAGE OF THE TRADE ITEMS

Ukraine's legislation requires conducting of forensic examination to determine the amount of loss in crimes against the property. Such examination aims to provide the necessary information on the cost of damages to pre-trial investigation and trial authorities to guarantee the restoration of violated rights to the injured parties.

However, the current judicial examinations and legal expert's opinions on the documentary evidence of the amount of shortages, resulted by theft or damage of the trade items, do not provide sufficient and complete data on the amount of material damage. Currently, the economic expert examinations do not take into account the factors that influence the change in the value of inventory holdings in

the period between the occurrence of a crime and the examination. Inflation and currency fluctuations are catalysts of this problem.

In this paper, the author examines the factors that determine the occurrence of inconsistencies between the results of the commodity expertise on valuation of the trade items and fair equivalent of the violated property rights, as well as the liability of the person who committed the crime. This paper argues that the problem stated above might be solved by providing complex (comprehensive) legal economic commodity expertise which will analyse both the premises of shortage and fair market value of the trade items. Conducting a comprehensive judicial economic expertise is based on the provisions of the current legislation.

The practical application of the results of the paper is the use of a common judicial practice of complex economic commodity expertise for the fair evaluation of the cost of the trade items, imposing the liability measures and the restoration of the violated property rights.

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PECULIARITIES OF STRENGTHENING OF LEGAL FRAMEWORK OF INTERACTION OF OPERATIONAL SUBDIVISIONS OF BODIES OF INTERNAL AFFAIRS WITH DEPARTMENTS OF THE STATE COMMITTEE

The theoretical basis for research in this direction was created in the Soviet and first decades of the post-Soviet period, long before the fundamental changes in the system of preliminary investigation and forensic examination.

In the 70-ies of the XX century. the results of their research were published mainly by Russian researchers.

In 1979, a monograph on the results of the study of the problem was published by A. N. Balashev. In the historical perspective, the author showed the process of

formation and development of traditional and new forms of interaction between units, proposed to consider the issue of verifying the possibility of creating investigative and expert units independent of the leadership of the Department of Internal Affairs.

In 1981, a textbook of Ukrainian scientists was published.

The Belarusian scientists did not stay aside. Having completed the study of the bases of interaction between investigators and inquiry agencies in the investigation of crimes, they published a monograph that aroused considerable interest of scientists and practitioners.

In 2003, basing on the results of the research, problems of interaction between the investigator of the Internal Affairs Directorate and the police in the production of the preliminary investigation M.Y. Beketov successfully defended the candidate's thesis. He persistently and consistently defended the opinion on the allocation of investigation and expertise from the Interior Ministry structure to independent committees. However, in this work, the forensic expert was only considered by him as a participant in investigative and operational groups when inspecting the scene of an incident.

The situation regarding the role of forensic experts in the process of investigating crimes and its interaction with operational and investigative units has radically changed after the formation of the Investigative Committee of the Republic of Belarus in 2011.

The State Committee for Forensic Expertise of the Republic of Belarus was established by the Decree of the President of the Republic of Belarus No. 202 from 22.04.2013 to improve the state forensic and expert activity, to strengthen the protection of the rights and legitimate interests of citizens and organizations in the criminal, administrative, civil and economic process.

On July 15, 2015, the Law of the Republic of Belarus "On the State Committee on Forensic Expertise of the Republic of Belarus" (No. 293) was adopted, which defined the legal basis for its activities, its main tasks and powers, as well as its legal status, legal and social protection guarantees for its employees, who have special

ranks, and civilian personnel.

Ch. 7 of the Law reflects the specifics of the organization of forensic activity in the State Committee of Forensic Expertise of the Republic of Belarus, and Ch. 8-10 fixed the main directions, the order of performance of functions and the duties.

Art. 5 of this law "Interaction of the State Committee of Forensic Expertise with Other State Bodies, Other Organizations and Citizens" identifies the directions and nature of the interaction of these entities.

On January 5, 2016, the Ministry of Internal Affairs, the General Prosecutor's Office, the Investigative Committee, the State Security Committee and the State Committee for Forensic Expertise of the Republic of Belarus approved the Instruction on the interaction between the bodies and divisions of the said law enforcement bodies of the Republic of Belarus in tracing and the procedure for conducting tracing operations by bodies of the Ministry of Internal Affairs of the Republic of Belarus, and on December 26, 2016, the resolution of the said and other bodies approved the Instruction on the procedure.

The Instruction on the procedure for conducting forensic examinations, examinations (studies) in the State Committee of Forensic Expertise of the Republic of Belarus, approved by the order of the GCSE of December 6, 2016 No. 240 – is an example of establishing interaction.

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USE OF INFORMATION-REFERENCE ACCOUNTS IN THE INVESTIGATION OF PROPERTY CRIMES

The article deals with topical issues, aimed at the use of reference accounts in the investigation of property crimes.

The article examines the history of the creation of various collections to optimize the fight against crime. Attention is paid to the problematic issues of

information support of crime investigation. Particular emphasis is placed on the low level of information support of process of investigation of property crimes. The peculiarities of the formation and use of reference collections and expert service of the MIA of Ukraine are noted to require research their generalizations and to find ways of optimizing the implementation of the accumulated information in combating crime. The author considers the directions of using forensic files and reference collections in the activities of the expert service units. Reference accounts of external footwear can be effectively used in the investigation of property crimes. Useful information for the investigation of crimes can be obtained by checking the traces of hacking, seized from the scene by reference records of tools and tools used in hacking. Reference accounts of methods of committing thefts, used in this criminal techniques and technical means to overcome the obstacle are very informative and useful in the investigation of crimes. In some cases, in the investigation of thefts, data obtained by reference books on the type and model of the used vehicle can be used. According to the author, now we can talk about additional opportunities to use reference files samples handprints. Recently, a lot of scientific works have been devoted to dermatoglyphics, based on the study of papillary patterns and used for genetic analysis, obtaining various diagnostic personal information about a person. It was also noted that when disclosing crimes, such kinds of information and reference accounts as a collection of knots and loops, tattoo cards, collections of textile fibers, samples of fabrics and fibrous materials, jewelry catalogs and others can be used quite effectively.

Provisions regarding the use of collector objects in the conduct of separate investigative actions (inspection of the scene, search, interrogation of witnesses) are stated. The objects of information and reference collections can be used during the inspection of the scene of the incident for conducting preliminary research. During the preparation for a search the collection can be used to obtain orientation information. When interrogating clearness and victims it is necessary to demonstrate the corresponding collection objects in order to find out the type of the used instrument, the items that were on the offender, the vehicle, stolen items, etc..

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THE PROBLEM OF THEORY AND EXPERT PRACTICE OF STUDY OF OBJECTS PHILATELIC ORIGIN

On the basis of analysis of modern literature and developments in the field Philatelic Examination revealed and proved Possibility practical using methods and techniques from related research disciplines. Based on research been summarized philatelic classification products formulated main objectives and task assessment, also detail the problem expertise collection of fakes.

On the hourly stage of the development of criminality in Ukraine, a small part of the science education is dedicated to the art expertise and philately.

At this time there is no approved methodology or thorough explanation of the identification and examination of objects philatelic.

Expert practice in cases of appointment of the above assessments is the solution to the question of their authenticity and cultural value.

Primarily it is necessary to analyze and identify issues and problem solved by Philatelic expertise.

The most complete and accurate in our opinion is the definition proposed by J.M. Bovynym in 1972. [In his guide he wrote that Philatelic expertise is the study of stamps and other philatelic material, qualified by professionals - experts to verify the authenticity of the brand extinguishing, evaluation, detection of minor repairs, latent defects, correctness, values, etc.

The subject of examination may be signs of postal fees, proof of their appearance, production and use. Examination of the authenticity of an object affects the study of all its elements (eg types of brands, gumming and extinguishing), its preservation (possible disadvantages, work on restoration, ornamentation and other changes).

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TO THE PROBLEM OF APPLICATION OF THE CONCEPTUAL APPARATUS IN CRIMINALISTIC EXPLOSIVE EQUIPMENT

With the advent of Ukraine's independence, the expert service created explosive engineering units whose primary task was to develop a methodological basis, conduct expert studies and research at the appropriate scientific and technical level. In the 1990s, one of the first problems faced by experts was the inadequacy and non-consistency of scientific and methodological literature with the regulatory framework of the Expert Service of Ukraine. Since 1992, the only actual sources were Yu M. Dildin, V. Martynov, A. Yu. Semenov, A. A. Shmyrev. Only in 2011, joint research efforts of the DNDECC, KNIICE and other expert institutions of Ukraine developed a methodology for comprehensive exploration of explosive devices. But, despite this fact, many controversial and problematic areas have emerged in expert practice. For example, during the conduct of classification studies, the main issue raised by the judicial and pre-trial investigation agencies on the expert's decision was: "Is the subject given to the study subject to the category of ammunition or explosive devices?".

In the process of solving this issue, and to this day, the experts face the problems associated with assigning one or another subject, submitted for research, to a certain category. Problems arise because in different methods, methodological materials, comments to Art. 410 and 262 of the CCU, Resolution of the Plenum of the Supreme Court of Ukraine of April 26, 2002, No. 3 defined various concepts of explosive devices and ammunition. That is why, at the present stage, the problem of identifying the conceptual apparatus, the timing of the munitions and the explosive device became actual.

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HISTORIOGRAPHY OF THE PROBLEM OF DETECTION OF AN IMPROVED BRANCH

The work is devoted to the issue of historical development of the activities of fingerprinting corpses in order to establish their identity in view of the general history of world development of fingerprinting.

The article consists of the following structural parts:

- Introduction (which includes the relevance of the topic, the degree of scientific development, the purpose of this publication and the purposes of the article)
- the main content
- Conclusions and list of literature

In the introduction a separate section highlights the relevance of the topic that addresses the problem of the constant search for the cheapest and most effective way

of identifying and recognizing people for law enforcement activities, and the establishment of unidentified corpses, in particular. Here, however, fingerprinting holds first place in the world, and in order for this method to be developed and implemented, one must take into account all existing experience. It is impossible to carry out without analyzing the degree of scientific development of this problem by scientists of Ukraine, the Soviet Union, CIS countries and abroad: MV Kisin, L.V. Stanislavsky, SP Didkovska, N.G. Bidikina, AI Laws, AA Sal'kov, VI Lebedev, SS Bystrov, V.M. Karavaeva S.V. Deri, SP Prilbolova, MN Shukhnin, D.A. Valetov, GS Voropayev, AV Vthurin AI Konovalova, Yu.P. Dubyagin, O.P. Dubyagina, GI Povresnyuk, AZ Biletskyi, AM Ratnevsky, VO Insect, SSSamishchenko, Sh.N. Khaziev, Yu Torvald, K. Reuter, F.R. Cherill, C.E. Chapel, Valentin Sava. The introductory part is completed by the construction of the purpose of this publication and the formulation of specific objectives of the article: 1) to analyze scientific and documentary sources of the problem under study, 2) to summarize the first facts of the establishment of unidentified corpses with the help of fingerprinting, 3) to consider the phased development of fingerprinting in the world and gradually to highlight the history of the doctrine of the establishment of unidentified corpses using means of fingerprinting, 4) to pay attention to the genesis of practical recommendations in this field; 5) to lay the groundwork for new practical

The main content of the article begins with the periodization of fingerprint observation of mankind with a division into three stages.

The first is when papillary patterns are of interest to mankind and are used by them as a component of cultural creativity, magic signs or means of anticipation of fate (chiromancy).

The second involves its study in examination of anatomical features of the human body.

The third period started when fingerprinting began to interest humanity as a mean of identification.

Within the limits of the third stage commences an overview of historical references about the use of fingerprinting to identify unidentified corpses. Due to this, there is a distinction between the activities of fingerprinting corpses, namely, normative provision with the prediction of separate functions for law enforcement bodies in the form of a special procedure and improvement of practical methods. The author illustrates his reasoning with statistical data on the detection and fingerprinting of unidentified corpses in Ukraine.

In the conclusions of the article the author's opinion on the degree of solution of the problems, set in the beginning and the results of the conducted research, is stated:

1) the historical development of fingerprinting corpses in the light of the emergence and improvement of fingerprinting practices in the world, which was carried out by means of generalization of the first facts of the establishment of unidentified corpses with the help of fingerprinting;

2) considered the phased development of fingerprinting in the world with the gradual isolation of the history of the doctrine of the establishment of unidentified corpses with the help of fingerprinting

3) special attention was paid to the genesis of practical recommendations in this field with the study of advanced developments and publications of Russian and foreign colleagues.

4) The existing world historical experience is summarized and systematized, and this now can serve as the basis for normative and practical developments in this field.

The work is intended for specialists in matters of forensic, expert and technical aspects of the activities of law enforcement bodies, as well as academics, lecturers, postgraduates and students of legal education institutions.

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POSSIBILITIES OF USING THE METHOD OF REGISTRATION OF MULTIPLE CORROSIVE RADIATION IN THE FOLLOWING IDENTIFICATION RESEARCHES OF BULLETS AND CASING IN "FOLLOW" AND LABORATORY CONDITIONS

The commission of serious crimes involving firearms presently considering conducting ATO, unfortunately, not uncommon. And the evidence - guns, bullets, shells - are investigated, usually with different modifications comparative microscopes. But this is not enough. Indeed, in 1998 a famous scientist and criminologist of Ukraine, Senior Fellow of Research Institute of the National Academy of Internal Affairs Y.I. Fedorenko to combat crime problems invented a unique device that allows you to work much more efficiently with real evidence.

Indeed, these arguments can determine what kind of weapon was used, and trace its way from the manufacturer to the owner. However, this process is far from simple. Seized from the scene bullets and cartridge cases are sent to regional SRFC where they investigate to determine the characteristics of trails (traces from the inner surface of the bore and the other parts of the weapons). Then check the "repetition" – whether or not the weapons was previously used in the commission of other crimes. If the result is negative, the evidence sent to the State Scientific Research

Forensic Center of MIA of Ukraine. This work is complex and time-consuming. For example, the identification of liners (balls) spent up to eight hours (in difficult cases, and more), as well as to study the bullets and shells still - has for decades mostly used different versions comparative microscopes (except for "THAIS" , "REBOUND"). This error is not excluded as a result of imperfection of the optical microscope system. Also significantly tightened deadlines identification expertise.

The idea to create a device that would help to maximize investigation, was born due to Y. Fedorenko in 1993. Then he worked with sources of nuclear radiation in another area, but decided to try to apply in the forensic field, namely in the judicial ballistics. As a result, he created a technical device, which later became known as "workstations" "KORID" (corpuscular ID). It is an absolutely safe, portable and compact scan-device. Within 15-20 minutes, the computer screen displays a three-dimensional image of the surface of the developed world - and any inspector or police criminalist-expert receives reliable information on firearms that have been used or applied. To use this appliance requires minimal special training.

Currently existing microscopes comparative weighing several dozen kilograms, not compact, not portable and are considerably more expensive. There were some analogues of "KORID" in the world, before the device attracted significant interest internationally. Representatives of one of the developed countries offered the author the right to sell the idea and production of this device.

Prototype "KORID" has been tested in practice. In the 90's Krivoruchko family was shot. To prove the guilt of the suspect seemed very problematic, his removed pistol was antique and the bore had a large degree of wear, the traditional method of research for the gun identification to find the murder examining bullets seemed impossible. Investigators asked the Y.I. Fedorenko to use "KORID" for the the identification studies, what has led to strongly positive conclusions.

An interesting detail is also "hidden" opportunities of "KORID" to work not only with bullets and shells, but also with other physical evidence - including coins, tools and hacking etc.

So basing on above-mentioned information we consider it appropriate to study detailed structure, operating principle and features for "bullfighting".

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PRACTICE OF THE USE OF THE CHEMICAL METHOD OF DETERMINATION OF FIXED FACTORY SIGNS IN PARTIES OF WEAPONS

In connection with the deterioration of the crime situation in Ukraine, the number of seized weapons with removed factory markings is increasing. To date, factory numbers for weapons that are illegally imported from the ATO zone and stolen from theft are often removed in order to conceal its origin and the possibility of establishing the owner.

Three types of methods are used to establish remote factory marking on weapons: chemical, electrochemical and magnetic suspension.

When deciding which method should be selected for work, it is necessary to take into account the specific conditions, the nature of the research objects, and sometimes the findings of the discovery. For example, on vertical surfaces it is not recommended to use chemical or electrochemical methods using a tray for etching directly on the investigated site, since the reagent will drain from the surface of the object. The electrochemical method with immersion in a bath is not convenient for studying large products or those that are difficult to disassemble.

When restoring factory numbers, as with any chemical research, it is recommended to initially apply methods that have the slightest change in the primary state of the object, including - an electrochemical and subsequently a chemical method.

One of the methods most often used when detecting factory markings for weapons is a chemical method.

The installation of images of remote factory marking on weapons by chemical method is the process of chemical etching (dissolution) of the surface layer of a metal using various chemical reagents. The indicated method is based on the fact that the metal parts in which structural changes took place have another chemical activity in comparison with metal oxides, which were not subjected to plastic deformations. As a result of uneven dissolution of the metal on the surface there are relief contours of deleted plate numbers.

Detection of images of factory markings on metal surfaces of weapons consists of three stages:

- preparation of the surface of a metal product;
- treatment of the prepared place by chemical reagents, which results in the identification of factory marks;
- Fixing and photographing restored factory markings.

Preparation of the surface of the details is one of the most important operations, the quality of which depends on the success of image recovery and its sharpness. The preparation is that the metal surface is freed from coarse traces and scratches left by the tools by which the destruction of the marking was carried out. For this purpose, it is recommended to use a file, then apply sandpaper or grinding powder. Depending on the nature of the scratches, their depth, grinding should begin with the use of rough paper and finish the thinnest. This operation should be carried out very carefully, removing the minimum layer, so as not to damage the metal layers that are below the scratch, since removing the excess layer worsens the recovery results. Grinding and polishing should be done perpendicularly to the direction of strokes and scratches from the tool, in order not to make scratches even deeper.

If, after the destruction of factory numbers in their place were filled with new ones, it is necessary to polish only those areas of the metal that lie around the newly completed serial numbers, without removing them. The final polishing of the metal

surface is carried out using the "GOI" paste. The prepared place is rubbed with cotton wool and then washed with organic solvents (alcohol, gasoline or "white spirit").

Typically, the metal parts of the weapons to be studied are made of ferrous metals. Special reagents are used to digest the surface of metal parts of the weapon with the removed factory marking symbols.

Typically, the metal parts of the weapons to be studied are made of ferrous metals. For etching the metal parts of the weapon with the removed factory marking, reagents made according to the following recipes are used:

- 1) nitric acid (concentrated) - 1 part;
acetic acid (concentrated) - 1 part;
Ethyl alcohol (96%) - 2 parts.

Based on the processing method and the chemical composition of the steel, the ratio of nitric and acetic acid can be changed, which often improves the visibility of the restored image.

- 2) 3-5% solution of potassium dichromate in 60-96% sulfate acid;
- 3) chloric acid (concentrated) - 8 parts;
Ethyl alcohol (96%) - 5 parts;
copper chloride - 1 part;
distilled water - 6 parts.

Reagents should be mixed immediately before use. The first reagent can be used to restore an image of factory marking on any steel product. It is used as follows: the prepared area of the product is surrounded by a side of plastic material (plasticine) and in the bath thus obtained pour as much reagent as necessary to cover the surface of the metal with a layer of 2-3 mm. From the moment of application to the metal surface of the reagent the restoration of factory markings begins.

The duration of this process is different and depends on the chemical composition of the steel, the depth of the damage (thickness of the spin layer of the metal, the quality of surface preparation).

Practice shows that in some cases, manifestation occurs during the first minutes of the reagents, and in others - in a few hours. If the recovery process is delayed, then the used reagent is removed from the surface of the filter paper for a

while and replaced by fresh, repeating these steps, if necessary, several times before obtaining the desired result.

The surface area after etching is covered with a black layer (a mixture of metal and acid reaction products). Remove it with a cotton swab moistened with water, and then washed with a swab moistened with ethyl alcohol. After such processing, the serial numbers detected are visible. In the event that the serial numbers have not been restored, the digestion time is increased by adding, as already indicated, a fresh portion of the fresh reagent.

The method of restoring serial numbers using the second and third reagents mentioned above is that the polished surface of the metal is heated to 200-220 degrees (the degree of heating is practically set by the formation on the metal surface of a yellowish color), and then polished to a mirror surface, degreasing an organic solvent, after which one of the above reagents is applied to another warm metal.

As the serial numbers or their individual parts are detected, the subject is photographed several times, as it often happens that the figures found during the work are partially or completely disappearing. At the end of etching, the test portion is rinsed with water or alcohol until the digestive reagent is completely removed, dried and, for preservation of the restored signs, covered with a layer of oil for cleaning the weapon, and then again photographed if necessary.

Summarizing the above, it should be noted that the chemical method of detecting the removed factory marks on parts of the weapon is quite effective, and therefore it should be used in the course of the discovery of the removed factory marks on parts of the weapon.

Moroz S.A., Kravets V.L., *specialists of the Ternopil Scientific Research Forensic center of the Ministry of Internal Affairs of Ukraine*

«IDENTIFICATION SIGNATURES FOR PLACEMENT OF SPECIAL POINTS»

The authors investigate the issue of identification of features by special points located on the trajectory of handwriting objects.

The practical relevance of the research topic is that signatures consist mainly of non-textual strokes and a limited number of letters. In such cases, the choice of identification features is reduced, as most signatures can not be estimated for compliance with the rules of the register. Expanding the range of identification features may be due to individual points, which are called by the authors «special».

The signature is thus considered as a carrier of structural-geometric information, since it reflects the dynamic system of motions on a plane in the form of a set of points. The most commonly used in handwriting are the following special points: beginning, ending, joining, crossing of movements and extreme points (extremums).

The definition of individual characteristics for the location of signature points remains relevant, as this issue is not clearly regulated in modern handwriting. In this regard, identified identification features are not always convincing, which may give grounds for their ambiguous interpretation and lead to an ungrounded or even erroneous conclusion regarding the performer of the disputed signature. This is due to the significant influence of the subjective factor, because the study is conducted by the visual-optical method – «on the eye», without a clear reference to the coordinate system, in the majority, without the use of instrumental methods and confirmation with convincing illustrative material.

Since the signature refers to objects of two-dimensional space, the position of its points in the handwriting must be determined by a system of coordinates similar to a rectangular system in elementary geometry. In this case, as a rule, the horizontal axis should be considered a signature line - a straight line formed by connecting the lower extremums of the first and last elementary letters of letters and (or) strokes. The vertical axis will be one of the perpendiculars, lowered to the signature line.

The location of the points «horizontally» in the coordinate system chosen by us is considered only along the lines parallel to the signature line, and «vertically» - for the perpendiculars lowered to the signature line.

The use of signature points makes it possible to determine the length of motions when performing individual graphic elements. With:

- the length of the movements in vertical / height - in the size of the perpendicular, lowered from the upper extreme point of the graphic element to the line of its basis;

- horizontally - by the projection size of the segment that connects the right and left extreme points of the graphic element to the line of its basis.

The authors give examples of the formulation of individual (separate) features.

The results of the comparative search are recommended to illustrate the images of the signatures, executed with the increase, on an equal scale. Illustrations executed in this way, show the location of special signature points and establish the ratio of dimensional characteristics of graphic elements.

The use of experts in the practice of the material extends the range of identification features used in the searching of signatures, reduces the influence of the subjective factor in the identification and evaluation of such features and makes it possible to visibly confirm the reliability of the results of comparative research with convincing illustrative material.

Judicial expert

V.L. Kravets

M.V. Semenihih, *director of the Lugansk Expert Forensic center of the Ministry of Internal Affairs of Ukraine*

S.G. Kachurin, *associate professor of the department of jurisprudence of the*

Eastern Ukrainian National University named after Volodymyr Dahl

DRAWBACKS OF CRIMINAL PROCEDURAL LAW ON REGULATION OF SELECTION OF SAMPLES AND FORENSIC EXAMINATION

It is well-known, that the problem of insurance of human rights, adaptation of criminal procedural legislation in accordance with the Constitution of Ukraine and international rules of law have led to the adoption of the new Criminal Procedural Code of Ukraine. The party of defense within the framework of criminal proceedings received the right to form and submit a court evidence based on the interests of the

accused, including the right to conduct an examination (Article 244 of the CPC of Ukraine), obtaining samples for its conduct (Article 245 of the CPC of Ukraine), which is, according to essentially, a revolutionary step in the doctrine of domestic criminal procedural science.

However, these stories are not fully provided by the legislator in the norms of the CPC of Ukraine.

Yes, the content of Art. 243, 245 of the CPC of Ukraine does not fully correspond to the title of Ch. 20 of this Code "Investigative (search) actions", in particular concerning the party of defense and the specialist, as the subjects of conducting these investigative actions.

The legislator did not take into account that for the effective conduct of forensic examination, qualitative selection of samples for expert research requires not only possessing evidence and actively use the organizational and tactical potential of the investigator. Such a potential should also be a defense, but, unfortunately, it is not fully regulated in its entirety.

In accordance with the provisions of Art. 245 CPC of Ukraine needs to be finalized. This article is proposed to be worded in this wording.

1. In case of necessity of obtaining specimens for examination, they shall be withdrawn by a party to criminal proceedings who applied for examination or upon request of which an expert examination was appointed investigating judge.

2. The procedure for the removal of samples of things and documents shall be established in accordance with the provisions on temporary access to things and documents (Articles 160-166 of this Code).

3. In the event that the examination is entrusted to the court or the prosecution party, sampling is to be carried out by an investigator or a court with the involvement of a specialist.

At the request of the prosecution or trial court, samples are obtained by an expert from the objects provided to him in the framework of the examination.

The selection of biological samples from a person shall be carried out in accordance with the rules provided for in Article 241 of this Code. In the case of

refusal of a person to voluntarily provide biological samples to an investigating judge, the court, at the request of the party to the criminal proceedings, which is being examined in accordance with the procedure provided for in Articles 160-166 of this Code, has the right to authorize the investigator, prosecutor (or to order them if the petition has been filed by the defense party) to take biological samples forcibly.

A sampling protocol is drawn up.

O.T. Tanchin, *head of the sector of
the Ivano-Frankivsk Scientific Research
Forensic center of the Ministry of Internal Affairs of Ukraine*

**THE PECULIARITIES OF FORMATION OF THE TRACES ON
CARTRIDGE CASES FIRED FROM FROMERS PISTOL MODEL
37(PRODUCTION FEMARU-FEGYVER-ES GEPGYAR R.T., BUDAPEST,
HUNGARY)**

Preface

The armament of the criminal surroundings and the steady tendency to commitment of crimes using fire-arms (including rifles due to their accessibility nowadays) – is one of the factors which make crimes worse and worse – well known situation in any civilized country.

Usage of fire-arms is an encroachment on rather broad range of material and non-material values of society, its achievements, which are defended by law. The fire-arms are the main mean of realization of criminal intents during killings, robberies, terroristic attacks and many others social dangerous deeds as it is one of the most effective mean of influence and control.

Accumulated experience

Within 1999-2016 most arms confiscated from illicit turnover, investigated in the expert centre, were not produced by our home industry (not more than 8%, depending on the year).

The officials of subdivision had the unique opportunity for checking dates by their own experience, which were elucidated in one of the fundamental source, using in our work – two – volume edition. “Automatic Pistols and traces on their bullets and cartridge cases” by A.I. Ustynov. Working with this source and real objects – pistols, bullets and cartridge cases, the most of information, particularly as to our arms is confirmed, but we cannot say the same about foreign ones.

The Unique Pistol Fromer Model 37

The Pistol has only general design characteristic features of this model, there are not only marking signs on its outer surface. Only a magazine with marking “37m” and control and tested marks on the base of the trigger were exception. During the disassembly and measuring it was ascertained absolute suitability with design of Pistol Fromer model 37. All parts of the Pistol have high frequency of surface. The jaws of hilt are made of horny laminar of animals.

The peculiarity of the design

The cartridge – base of bolt has peculiar kind of final processing – the arch of cartridge is like T and it is distinctly expressed and it differs from those in the book of reference – parallel concentric rings around the orifice of firing – min.

The angle between the lug of ejector and the hook of extractor is 195°, which is not typical for Pistol Fromer mod. 37 for cartridge 7,65 mm Brauning, but for cartridge 9-mm Brauning short /9x17mm/.

The present 7,65 mm Pistol Fromer mod.37 could be ordered personally (so custom – model).

Conclusion

The publication of enchiridion typical catalogue is actual, where such information is renewed nowadays taking into consideration, there is a considerable number of military pistols at the Ukrainian market reconstructed for firing (shooting) with not deadly cartridges, also a great number of illegal arms confiscated from turnover in connection with the conflict in eastern Ukraine, the information about it is restrained by old informative literature.

V.M. Trotsyuk, *forensic expert of the
Volyn Scientific Research Forensic center
Of the Ministry of Internal Affairs of Ukraine*

PROBLEMS AFFECTING IN THE PROCESS OF RECOGNITION AND PACKING OF SERIOUS INFORMATION OF DACTILOSCOPIC ORIGIN

Among the large number of traces that are withdrawn every day during surveys of places of committing crimes, traces of hands are important, which is a reflection of papillary patterns of fingers and palms of hands on various subjects and substances.

The correctness of the fixation and removal from the scene of the traces of the hands makes it possible to reveal the crime, from the moment of the commencement of which a significant period of time has passed, which is not always possible for other types of tracks as a result of the change in the trace-forming surface of the object (wear of the sole of the shoe, sharpening of the weapon of burglary, etc.). . The success of work with the tracks of hands depends on a large number of factors, among which the main thing - the receipt of fingerprint information, detection, fixation and removal of traces of hands in the process of reviewing the place of the event.

The traces of hands discovered during the review of the scene should be preserved for further study and use as evidence, but with the adoption of the Law of Ukraine "On National Police" and carried out by the reform of the Expert Service of the Ministry of Internal Affairs of Ukraine, the experts of the Expert Service faced the problem of receiving proceeds for the study of objects of inadequate quality.

Because the Expert Service has not been properly interacted and the National Police of Ukraine, the effectiveness of conducting an overview of the place of the event is reduced, which significantly influences the completeness and consistency of the use of fingerprint information in the disclosure, investigation of crimes and establishment of the offender.

Such disadvantages are due to a number of reasons. At the first place for the correct detection, removal and fixation of trace information of fingerprint origin, it is necessary to have a wide range of in-depth knowledge about the nature of traces, their features and their nature.

Equally important is the proper packaging of objects and the selection of the appropriate packaging material, depending on the nature of the object, which contains track information of fingerprint origin.

To some extent, improper packaging of research objects can be explained by the fact that:

- in the forensic literature, the issue of packaging of research objects is not given due attention. In Reference Literature from criminology, the investigator's guide overview of the place of the event contains only general indications of the need for packaging items detected on-site events;

- The inspectors-criminologists lack the appropriate experience in the packaging of material evidence, especially those with fingers.

Possible ways to solve these problematic issues is the introduction of a separate course of training criminological inspectors on the basis of the National Academy of Internal Affairs of Ukraine, with emphasis on practical lessons, with the aim of mastering the criminological inspectors with the skills of working with trace information during the review of the place of the event, as well as the development of methodological recommendations for the packaging of research objects, taking into account modern technologies, the development of science and technology.

O.F. Fedulova, *Senior Forensic Expert of the
State Scientific Research Forensic center
of the Ministry of Internal Affairs of Ukraine*

Special aspects of expert research of short-circuit melting on conductors undergone a long annealing in a fire

Establishing direct or inverse causal connection between fire and short circuits in electrical conductors is possible because the metal conductors can maintain situational information in microstructure which records parameters of metal during the process of curing and afterwards together with changes in physico-chemical (primarily temperature) environmental conditions.

Due to existing methods and methodics, the fundamental feature which is a critical factor for an expert in determining the temperature conditions of the environment in which the short circuit melting (SC) occurred and helps it to establish conformity of this SC to a particular type is the microstructure of the melting metal.

For example: the presence of small, elongated toward the heat transfer zone of the grains indicates an accelerated, directed (towards the cold conductor or unheated environment) hardening of the metal of SC melting, so, the presence of a sufficient temperature gradient between the molten SC of the conductor's metal and the contacting environment, which generally corresponds to the primary SC (except the rare cases of specific conditions of the localized heat transfer in case of the fire presence). At the same time, a structure consisting of equiaxed enlarged grains corresponds prolonged hardening in case of the absence of priority directions corresponds to the secondary SC (when the temperature of the molten by SC metal in compare with temperature components of nonablated area of the conductor and the environment, which correspond to hot environment where SC occurred).

For physicomatallurgical study of the short circuits traces in order to avoid research of amended (recrystallization) structure the conductors with plastic properties preserved should be selected. However, due to expert practices, copper wires with relatively large sections often have quite high plastic performance even after significant burnout, which lead to structural variations of metal (recrystallization) or even to destruction of its structure.

A.N. Hoh, research scientist of the State Institution "Scientific-practical center of the State Committee on forensic examinations of the Republic of Belarus "

THE OPPORTUNITIES OF STUDYING ANATOMIC AND ECOLOGICAL PARAMETERS OF WOOD'S YEAR LAYERS OF PINUS SYLVESTRIS FOR THE DEGRADATION OF GROUP ACCESSORIES

The wood as a component of the environment is often found in investigative and expert practice and is of great importance as evidence. The immediate object of research in this case are its individual properties or their selective variability, which contribute to the diagnosis of the desired states or particular events. These features remain stable during the identification period, which contributes to solving expert

problems.

In the Republic of Belarus, timber and lumber belong to a group of goods, the origin of which is often not possible to establish because of the lack of the necessary methodological tools. This fact makes it extremely difficult to monitor the implementation of the rules of forest management and prevents the disclosure of offenses related to illegal timber trade.

Nowadays, when determining the origin of felled timber, only the widest group membership is established, and the belonging of the investigated objects to large areas is ascertained. In the overwhelming majority of cases, this can not fully satisfy the interests of investigative and expert practice, since tasks arise daily aimed at establishing the source and local place of origin of forest products, that is, narrowing their group affiliation.

In the State Institution "Scientific and Practical Center of the State Committee of Forensic Expertise of the Republic of Belarus", since 2016, research aimed at developing methodological approaches to establishing the place of growth of felled timber according to anatomometric parameters that are formed under the influence of environmental factors has been conducted.

The anatomical features of woody plants are genetically determined signs, the formation of which is influenced by environmental conditions (trees adapt their structure in accordance with the conditions of growth, seasonal and interannual variability of the climate). Adaptation occurs during the processes of cell division and differentiation, leaving its mark on the anatomical characteristics of the cells. Therefore, the anatomical elements of the annual layers, along with the basic indicators of radial growth (the width of the annual layer, the width of the zones of early and late timber), can be successfully used in expert practice in determining the habitat of pines and, respectively, the site of interest.

This article presents the results of experimental studies related to the elucidation of trends in the variability of the anatomical features of the annual layers of *Pinus silvestris* L. wood (*Pinus silvestris* L.), depending on the type of forest and ecological conditions.

The carried out researches have allowed to reveal some features of anatomic structure of annual layers of a pine ordinary depending on humidity of soil. They showed that the widest annual layers are characteristic of mossy pine, that is, for the conditions of the site of growth, approaching the optimal ones, and the narrowest ones for the sphagnum pine, that is for the upper bogs with excess moisture. In other words, an increase in the moisture content of the soil causes a decrease in the width of the annual layers. The percentage of late pine wood varies from 26.2 to 34.5%. The lowest values are noted in the pine forest as mossy, the largest in the pine forest is sphagnum. When the width of the annual layers is reduced, the number of late tracheids increases in pine. The number of annual layers increases with increasing soil moisture.

Comparative anatomical study of tracheids of annual layers on trial plots revealed significant differences. In particular, the largest radial and tangential dimensions of the tracheid cavities of both early and late wood are characteristic of mossy pine, and tracheids with narrower cavities are characteristic of sphagnum pine. Both the radial and tangential diameters of the vertical resin pitch are relatively stable and vary slightly depending on the degree of moisture. For this reason, you can later abandon measurements of this parameter.

These and other differences in the anatomical structure of the annual layers can serve as a visual example of the effect of environmental factors on the stand and are important distinctive features for homogeneous growth conditions. They are probably adaptive in nature and are largely determined by the local growth conditions in which they develop.

The obtained results are of practical importance for conducting comparative studies of pine wood in order to determine the site of its growing area.

V.N. Chysnykov, *candidate of legal sciences, associate professor,*
leading researcher of the State Scientific Research Institute of the Ministry
of Internal Affairs of Ukraine

**HANS GROSS - THE FUNDAMENTALIST OF CRIMINALISTIC
SCIENCE AND CRIMINAL PSYCHOLOGY
(TO THE 170TH ANNIVERSARY OF THE BIRTHDAY)**

Hans Gustav Adolf Gross (Gross) was born on December 26, 1847 in Graz of the Austro-Hungarian Empire. His father, Johannes Gross, served as an imperial military commissar, his mother Francis Luttsendorff's was a housewife, and her great-grandfather was a well-known lawyer and served as court counsel in the court of Wetzlar. After graduating from the local gymnasium, the young man decided to continue his family tradition and become a lawyer. Hans studied first at the Faculty of Law of the University of Vienna, and then transferred to the same faculty of the native Graz University.

In 1870 he successfully completed his studies, defended his thesis and was awarded a doctorate in law. He began his career as an investigative judge at the local district court. Soon he was forced to leave public service. After the resignation, Hans Gross, as an assistant to a sworn attorney, engaged in advocacy practice and scientific work, published articles on legal issues in the pages of legal journals.

Adolf Glaser, Minister of Justice of Austria, famous lawyer and scientist drew attention to the scientific work of Assistant Attorney Dr. Hans Gross, and in 1875 invited him to enter the civil service again as a judicial investigator. Dr. Gross accepted the Minister's proposal.

In 1876 he married Adélie Reiman (1850-1842), and, a year later, they had a son, Otto. The wife of the scientist was an intelligent and highly educated woman. Despite her poor outlook, she helped her husband to prepare for the publication of his works.

In 1878, Hans Gross was forced to take part in hostilities on the territory of Bosnia, occupied by Austria-Hungary. For the bravery shown, he was promoted to lieutenant, awarded the Knight's Cross of the Order of Franz Joseph and appointed a company commander. After the end of the hostilities, Senior Lieutenant Gross

returned to his hometown of Graz. After the appointment in 1884 of the post of comrade of the district attorney, he began a vigorous activity in the fight against crime, published a number of articles devoted to the analysis of various issues of investigative practice. On his initiative, in all the police departments of the district measurements of criminals were introduced. Dr. G. Gross strongly advocated the introduction of anthropometry throughout Austria.

In 1892, Vienna Assistant Attorney Dr. Hans Gross issued his main world-famous work "Guide for investigative judges, police officers, gendarmes, etc."

Under criminology, the author understood the science of facts in criminal law, and his goal and task was to study its realities and evaluate the results of this study. The content of criminology is the doctrine of the identification, study and use of physical evidence, the study of certain types of crime, as well as the life of criminals. The object of forensic study, according to the scientist, is criminal activity.

In the manual, he systematized all known at that time means and techniques of working with evidence, developed a number of new recommendations on the study of tracks, laid the foundation for the methodology for disclosure and investigation of certain types of crimes. This fundamental work (more than 1000 pages) became the first textbook on forensics, a kind of "bible of the investigator".

The scientist was well aware that for the training of future professionals investigators it is necessary to introduce the study of criminology as a teaching discipline in the university curriculum. The Minister of Justice of Austria offered G. Grosso to read a three-month course of lectures for people starting their work in the judicial department of the capital.

For successful teaching, Dr. G. Gross was awarded a government award, and the Ministry of Justice offered him to read his course every year to judicial officers in other major cities of the empire.

In 1895, the Congress of the International Union of Criminalists was held in the Austrian city of Linz, where Dr. Hans Gross delivered a vivid and informative report. The participants of the congress recognized him as the "father of

criminalistics" and decided to recommend the introduction of a special course of criminalistics for future lawyers at universities.

Dr. Hans Gross is considered not only one of the founders of the science of criminalistics, but also a pioneer in criminal psychology. In 1898 he published a new fundamental work "Criminal Psychology".

On August 1, 1898, the Austrian Ministry of Culture and Education decided to send Dr. Hans Gross's doctor to work at the University of Chernivtsi. In the university, Professor G. Gross lectured on the criminal process, material criminal law, and also conducted a special course of penitentiary law and seminars on criminal law. In 1899-1900 he was elected to be a dean of the Faculty of Law. G.Gross worked as a professor at Chernivtsi University until July 31, 1902.

The Chernivtsi period of scientific and pedagogical activity of the famous criminalist turned out to be very fruitful. In 1898, he founded the journal Archives of Criminal Anthropology and Criminology. During the years of the scientist's stay in Chernivtsi, 9 issues of the journal were published, which he edited directly.

At the same time, Professor G. Gross developed and constructed an investigative case for detecting and fixing traces on the scene.

From Chernivtsi, G. Gross moved to Prague, where he worked as a professor of criminal law at the local university for three years.

July 20, 1905 57-year-old Dr. Hans Gross was invited to the post of ordinary professor of criminalistics and criminal procedure at his alma mater - Graz University (in this school he worked the last 10 years of his life). In 1908, the Austrian government, taking into account the active participation of the scientist in the reform of criminal legislation and proceedings, as well as his scientific and pedagogical merits, awarded the scientist with the Order of the Iron Crown. Two years later, Professor Hans Gross was elected to be a dean of the Faculty of Law.

While engaged in teaching activities, Professor G. Gross tried to create specially equipped laboratories for the study of criminalistics and did not cease dreaming about the creation of the Institute of Criminalistics. After moving to his native city in 1905, he handed over to the University his own forensic museum,

which he began to collect for exhibits while working as a forensic investigator. Hans Gros needed many years of petitions and pestering the thresholds of bureaucratic offices, so that finally his dream came true.

On February 13, 1913 at the University of Graz opened the Institute of Criminalistics, the head of which was appointed Professor Hans Gross. The students of the Institute were given courses of lectures on criminology, criminal psychology, criminal anthropology and criminal statistics. The Institute had its own specialized library, a forensic science museum, several laboratories, a magazine called "The Archive of Criminal Anthropology and Forensic Science", whose editor-in-chief was Hans Gross. In the Institute, where the so-called Grak School of Criminalistics was formed, not only individual experts, but also whole delegations from many countries of Europe and America came to the experience.

The only son of Hans Gross, Otto (1877-1920), is known in history as an anarchist psychoanalyst and a supporter of free love. After receiving medical education in 1899, he worked for two years in South America as a forensic doctor. The last years of his life, Otto Gross spent in poverty, suffering from sexually transmitted diseases and addiction to morphia, persecuted by the police for radical-anarchist beliefs.

In the last years of his life, Professor G. Gross was assigned to write memoirs. His memories of childhood and youth were printed. But the family troubles associated with his son Ott, apparently, knocked down the remnant of the scientist, and on December 9, 1915, he died of pneumonia in his own house on Herdergasse, 6, two weeks before his 68th birthday. The founder of criminalistics was buried in the family crypt in Graz at St. Peter's Cemetery.

A.I. Swied, *Ph.D., associate professor,*
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on the forensic examinations of the Republic of Belarus

**AVAILABILITY OF FORENSIC EXPERT SUPPORT AS A
CRITERION OF EFFICIENCY OF THE NATIONAL MODEL OF
FORENSIC EXPERT ACTIVITY**

The effectiveness of the model of implementation of state policy in the field of forensic expert activity must be considered from the point of view of its availability, and in this case in two aspects: economic and social.

On the basis of the analysis carried out in the article, the following indicators of the availability of forensic expert support of the participants in the judicial process are proposed, which were considered in relation to the Belarusian model of forensic expert activity:

- the number of trained experts;
- the ability of experts to provide the requirements of participants in the proceedings in conducting expert assessments in a statutory time-limit for all types of examination sought;
 - state financing of forensic examinations in criminal cases;
 - state regulation of pricing in the sphere of performance of paid forensic examinations;
- the availability of legal (including procedural) mechanisms of forensic expert support of the participants in the proceedings;
- the existence of organizational conditions for the analysis and implementation of the requirements for judicial and expert support of the participants in the proceedings.

O. M. Ianchiauskas, *state expert*

of the central apparatus of the State Committee

of forensic examinations of the Republic of Belarus

SOME PECULIARITIES OF IDENTIFICATION THE WHOLE BY PARTS ON THE EXAMPLES OF EXPERT PRACTICE

It is possible to establish expertly the belonging of parts to a single whole due to the fact that parts of the destroyed (dissected) object retain interrelated characteristics, one of which arose at the time and due to separation (the configuration of the separation line and the relief features of the separation planes), while others existed for the object before dismemberment into parts. At the same time, in order to establish the whole in parts, only those signs that are inherent in the subject as an integral system can be used in carrying out the research.

In general, the objects of examination, being objects of the material world, are characterized by many features of the external and internal structure, the specifics of which are determined by the nature of the origin, purpose, use of objects. They can be as specially specified (text, line, figure, etc.), and have a random character (traces of tools for manual and machine processing). Special signs also arise with wear and tear on objects (scratches, creases, stains, etc.).

The formation of lines and separation planes essentially depends on whether the object was compound or monolithic. In a composite object, separation lines are defined in advance, they are formed during manufacture or assembly. However, with prolonged contact, and even more so when interacting with moving parts of the object, on each of them the external structure of the other contacting part is more or less reflected. When a monolithic object is destroyed, the lines and the plane of separation arise as a result of a violation of its integrity. The formed lines and separation planes are individual in their configuration, which is due to the internal individual structure of the objects. Принадлежность частей единому монолитному целому устанавливается при наличии общих линий разделения и взаимопереходящих признаков. При исследовании частей несоставного предмета первоначально определяют их однородность, а тем самым и сопоставимость. С этой целью исследуют внешние морфологические

признаки, отражающие общее строение расчлененного предмета, а также признаки, отражающие природу материала и его внутреннюю структуру.

В отличие от иных идентификационных исследований при установлении целого по частям на стадии отдельного исследования определяется самая широкая групповая принадлежность объектов, после чего производится их сравнение.

При наличии визуально наблюдаемой общей линии разделения, а также индивидуализирующих взаимопереходящих признаков установление единого монолитного целого не вызывает особой сложности. Однако предметы, части которых могут стать объектами экспертизы, чрезвычайно многообразны и могут не иметь плотную целостную структуру, являясь при этом единым монолитным целым. Вследствие этого установление общей линии разделения частей таких предметов может быть затруднительным, хотя и возможным.

При наличии линии разделения, конфигурация которой не имеет выраженных особенностей, а также при установлении одномоментного разделения объектов, когда конфигурация линий разделения одинакова, наибольшую ценность для вывода приобретают не линии разделения, а индивидуализирующие взаимопереходящие признаки, которые были присущи целому объекту и сохранились в определенной взаимосвязи у ее частей. Универсального и четко установленного перечня таких признаков нет; следует лишь учитывать, что одни и те же признаки не всегда могут выступать в качестве таковых. Выделение того или иного признака как индивидуализирующего взаимопереходящего осуществляется экспертом на основе исследования внешнего строения и внутренней структуры частей предмета, состояния поверхностей, механизма разделения объекта, а также с учетом особенностей конкретных обстоятельств дела, связанных с возникновением тех или иных признаков.

The belonging of parts to a single monolithic whole is established in the presence of common lines of separation and mutually transmissive characteristics.

In the study of the parts of the noncomposite object, they are initially determined by their homogeneity, and by the same token comparability. For this purpose, investigate the external morphological features reflecting the general structure of the dismembered object, as well as signs reflecting the nature of the material and its internal structure.

Unlike other identification studies, when establishing the whole in parts at the stage of separate research, the widest group membership of the objects is determined, after which they are compared.

In the presence of a visually observable common line of separation, as well as individualising mutually transient characteristics, the establishment of a single monolithic whole does not cause particular complexity. However, objects, parts of which can become objects of expertise, are extremely diverse and may not have a dense integrated structure, being at the same time a single monolithic whole. As a consequence, the establishment of a common line for the separation of parts of such items can be difficult, albeit possible.

In the presence of a separation line, the configuration of which does not have distinct features, as well as in the establishment of a one-stage separation of objects, when the configuration of the separation lines is the same, the separation value is the most valuable for the derivation, and individualizing mutually transient characteristics that were inherent in the whole object and preserved in a certain relationship at its parts. There is no universal and clearly established list of such features; one should only take into account that the same characteristics can not always act as such. The selection of one or another characteristic as individualizing the mutually transversal is carried out by the expert on the basis of the study of the external structure and internal structure of the parts of the object, the state of the surfaces, the mechanism for separating the object, and also taking into account the particular circumstances of the case involving the appearance of certain features.

Thus, by establishing the whole in parts, the expert makes a conclusion on the basis of special knowledge not related to the circumstances of the case. On the other hand, knowledge of the circumstances of the case allows the expert not only to

choose the path of expert research, but also to specifically imagine the mechanism of the appearance of certain features of the identified whole.

When dividing an integral object, depending on the material, its internal structure and external structure, the edges of the parts of the object can undergo some changes. In this case, when examining the edges of the separated parts, the expert should determine the degree of change in the edges, and when combining the parts along the common separation lines, evaluate the results of the combination, taking into account the existing changes. Such changes, in particular, can be characteristic for the separation of thin polymeric, metal products, paper products, knitwear, fabric.

Partial changes do not make it difficult to assess the results of the study, since the coincidence of the configuration of the separation line in a certain section or in several sections indicates that the divided parts previously formed a single whole. With a significant change in the edges of the separated parts, the evaluation of the results of the study is complicated. In this case, the conclusion that parts that do not coincide along the line or plane of separation previously formed a single whole, can be made only if the individual set of mutually transferable characteristics coincides with them. We are talking about the signs observed in the zone of dismemberment, located both on the surface and in the structure of the material. Not coinciding completely with the comparison and overlapping, they nevertheless continue to each other. The persuasiveness of such overlapping depends on the character of the indicated characteristics and the method of their origin, the degree of deformation, and also on the size of the missing section between the objects being compared.

If the parts under investigation are comparable in terms of group (generic) traits, but the results of combining do not give grounds for either a negative or a positive conclusion about the belonging of these parts to a single whole (there is no common line of separation and mutually transmissive characteristics), the expert formulates a conclusion that the question can not be solved.

Summing up, we can say that the examination of the establishment of the whole in parts is characterized by the identification of a system of interrelated

individual features of the identifiable whole that are preserved when it is divided. For all types of objects, the common line of separation has an integrative property. The formation of lines and separation planes essentially depends on whether the object was monolithic or composite. In this regard, the approaches to solving expert tasks for establishing the whole will be different.